

CLAIMS

1. A voltage detector circuit comprising:
 - a comparator having a first input coupled to a first voltage source having a first voltage and a second input coupled to a second voltage source having a second voltage to be compared to the first voltage source, a resistance being coupled in series with the second input;
 - a variable current source reference coupled to the resistance to draw a reference current therethrough to establish a threshold voltage difference between the first and second voltages detected by the comparator; and
 - a feedback control signal from the comparator for increasing the current generated by the variable current source reference as the second voltage approaches the threshold voltage, whereby the voltage detector consumes a lower power when the second voltage is outside the threshold and achieves greater accuracy as the second voltage approaches the threshold.
2. The voltage detector circuit of Claim 1 wherein the first voltage is a battery voltage and the second voltage is an output of a battery charger.
3. The voltage detector circuit of Claim 2 wherein an output of the comparator controls operation of the battery charger.
4. The voltage detector circuit of Claim 1 in which the circuit is in a cellular telephone.
5. The voltage detector circuit of Claim 2 in which the circuit is in a cellular telephone.
6. The voltage detector circuit of Claim 3 in which the circuit is in a cellular telephone.

7. The voltage detector of Claim 4 wherein the circuit is powered by the cellular telephone battery.
8. The voltage detector of Claim 5 wherein the circuit is powered by the cellular telephone battery.
9. The voltage detector of Claim 6 wherein the circuit is powered by the cellular telephone battery.
10. The voltage detector of Claim 1 wherein the increased current is temperature compensated.
11. A method of detecting a voltage comprising:
comparing a first voltage with a second voltage utilizing a comparator
detecting a first threshold voltage difference between the first and second voltages;
injecting a reference current into the comparator to change the threshold voltage difference detected by the comparator as the second voltage approaches the first voltage, whereby the accuracy of the voltage detection is increased as the second voltage approaches the first voltage.
12. The method of Claim 11 wherein the injected reference current is generated by a variable current source.
13. The method of Claim 12 wherein the variable current source generates a first injected reference current when the second voltage is different from the first voltage by a predetermined voltage level, the injected current increasing from the first level as the second voltage approaches the first voltage.
14. The method of Claim 11 wherein the first voltage is a battery voltage and the second voltage is an output of a battery charger.

15. The method of Claim 14 wherein an output of the comparator controls operation of the battery charger.
16. The method of Claim 12 wherein the comparator and variable current source is in a cellular telephone.
17. The method of Claim 16 wherein the comparator and variable current source is powered by the cellular telephone battery.
18. The method of Claim 11 wherein the injected current is temperature compensated.
19. The method of Claim 11 wherein the injected current is drawn through a resistance in series with the first or the second voltage.
20. The method of Claim 14 wherein the injected current is drawn through a resistance in series with the output of the battery charger.